Case 3493

Haliplanella Hand, 1956 (Anthozoa, Actiniaria): proposed conservation by suppression of Haliplanella Treadwell, 1943 (Polychaeta)

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic name *Haliplanella* Hand, 1956 for a widespread sea anemone by suppressing the senior name *Haliplanella* Treadwell, 1943 that was first, through an error, used for a group of polychaete annelids, was later put into synonymy, and is now no longer used.

Keywords. Nomenclature; taxonomy; Cnidaria; Anthozoa; Actiniaria; Annelida; Haliplanella; Haliplanella lineata; sea anemones; worldwide.

1. Homonymy exists between the genus-group names Haliplanella Treadwell, 1943 (Polychaeta) and Haliplanella Hand, 1956 (Anthozoa). The senior name has generally been omitted from lists of generic names and has long been relegated to synonymy, whereas the junior name has enjoyed currency and forms the basis of a family-group name. In our opinion stability would best be served by suppressing the senior homonym. 2. This situation was first brought to the attention of the International Commission on Zoological Nomenclature in 1977 as Case 2192 by Dunn & Hand (1977) but was never voted on. Comments on the case by den Hartog (1978) and Williams (1978) were published in the Bulletin of Zoological Nomenclature and responded to by Dunn & Hand (1978). In recent correspondence with the Secretary of the Commission it was established that Fautin (who had written under the name Dunn in the 1977 appeal) had agreed to hold back this application pending publication of 'den Hartog's new taxonomic evidence'. However this evidence was never published and den Hartog died in 2000. It seems that taxonomic concerns (discussed below) prompted the Commission to delay the voting on this Case, but the nomenclatural issue remains and should be resolved. Considering the length of time elapsed and the

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many developments since the original appeal, the Secretary advised that a new application be formulated rather than resuscitating Case 2192.

3. The genus-group name *Haliplanella* was first published by Treadwell (1943), p. 32 for a pelagic marine polychaete. He provided a short summary of the differences between the genera *Haliplanes* and *Haliplanella*, attributing both genera and the differential diagnosis to Reibisch (1895). The use of the name *Haliplanella* was clearly an error because it does not appear in any of Reibisch's published work, although the pages cited by Treadwell do contain descriptions of the genus *Haliplanes* and of the species *Haliplanes gracilis*. In the same paper, Treadwell (1943, p. 32) described a new species, *Haliplanella pacifica* (holotype 20079, United States National Museum), whereby the name *Haliplanella* Treadwell, 1943 met the criteria of availability, with *H. pacifica* the type species by monotypy. Although Treadwell has been recognised as author of the genus (Dales, 1957; Hartman, 1956, 1959; Ushakov, 1972), *Haliplanella* did not appear in Volume 5 of *Nomenclator Zoologicus* (Neave, 1950), probably because it had not been intended as a new name by Treadwell (1943).

4. The sea anemone in question, variously known as Haliplanella luciae, H. lineata, Diadumene luciae or D. lineata, is the most widespread species of anemone in the world (e.g. Seaton, 1985; Fautin et al., in press), having apparently been dispersed in part through human agency (Zabin et al., 2004). Its distribution is probably attributable to its ability to tolerate extremes of salinity and temperature better than most anemones, and its ability to reproduce asexually (e.g. Minasian, 1982). Because of these broad tolerances, and the associated ease of keeping animals in the laboratory, it has been the subject of much physiological and ecological research (e.g. Williams, 1968, 1972, 1973, 1975; Sassaman & Mangum, 1970, 1973; Kiener, 1971; Atoda, 1973, 1976; Shick, 1976; Mire & Venable, 1999; Watson et al., 2008). Unlike many anemones, it is so morphologically distinctive as to be almost unmistakable, and so the taxonomic issue alluded to above does not relate to the problem of identifying an invasive species. In 1869, Verrill (p. 23) described Sagartia lineata based on preserved specimens from Hong Kong that were accompanied by notes on colour, habitat, etc. in life. In 1898, Verrill (p. 393) described Sagartia luciae based on live specimens from Woods Hole, Massachusetts, that were discovered by his daughter, Lucy. No type material of either species exists (Fautin, 2008). It is now widely accepted (e.g. Seaton, 1985) that both of Verrill's descriptions refer to a single species. In Verrill's day this might have seemed unlikely, but in the light of what we now know about the distribution and tolerances of the species, it is a reasonable conclusion. In 1956 (pp. 210-211), Hand proposed the genus Haliplanella for the sea anemone described as Sagartia luciae Verrill, 1898 (pp. 493-494). The species has also been included in other genera (see synonymies in Hand, 1956; Fautin, 2008). At the same time Hand (1956, p. 210) established the monotypical family HALIPLANELLIDAE for Haliplanella luciae (Verrill, 1898). Neave (1939) listed 'Haliplanes (pro Halv-Reibisch, 1893) Reibisch, 1894, Pelag. Phyllodoc., 3, 12.-Verm (Polych.)' and the online version notes it is a junior homonym. The subsequent volume of Nomenclator Zoologicus (Edwards & Hopwood, 1966, p. 115) listed 'Haliplanella Hand 1955, Wasmann J. Biol. Vol. 13: 210.-Coel.'

5. The first comment by Williams (1978) on the proposal by Dunn & Hand (1977) to suppress the name *Haliplanella* for the polychaete in favour of that for the sea

anemone concerned the date of Hand's description; Dunn & Hand (1978) conceded that the issue of the journal was dated 1955 but appeared in 1956, as documented by a note in the subsequent volume of the journal. The second comment by Williams (1978) as well as those by den Hartog (1978) were taxonomic in nature. den Hartog (1978, p. 74) thought it likely that *Haliplanella* and HALIPLANELLIDAE would 'disappear in synonymy', so the appeal by Dunn & Hand (1977) was moot. Although late in his life Hand eventually came to share that opinion, the name *Diadumene* Stephenson, 1920 (type species by monotypy *Tricnidactis errans* de Oliveira Pires, 1987) has been placed in the family *Haliplanellidae*, which would be invalid under Article 39 unless this application, first made in Case 2192, is granted.

6. Hartman (1956) synonymised Haliplanella pacifica Treadwell, 1943 under Halyplanes gracilis Reibisch, 1893, the type species of Halyplanes. In 1957, Dales synonymised the genus Halyplanes under the genus Maupasia Viguier, 1886. Thus Haliplanella pacifica Treadwell is now considered a junior subjective synonym of Maupasia gracilis (Reibisch) (Hartman, 1959; Ushakov, 1972).

7. From 1955 through the latest issue available online, the generic name *Haliplanella* appeared in *Biological Abstracts* once for the polychaete, as an invalid synonym (Hartman, 1956), and 55 times for the anemone, often as a valid name (aside from citations in paragraphs 4 and 5, above, e.g. Minasian & Mariscal, 1979; Watson & Mire, 2004) and also as a synonym (e.g. Molina et al., 2009). Thus, during the past 54 years, the name *Haliplanella* has appeared in the literature for the polychaete only once, as a junior synonym of *Maupasia* Viguier, 1886, while *Haliplanella* is still used for the anemone. Under these circumstances, although the conditions of Article 23.9.1 for automatic maintenance of prevailing usage are not met, we believe that conservation of *Haliplanella* Hand, 1956 will best serve stability of nomenclature and thus refer the matter for a ruling as specified in Article 23.9.3.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- to use its plenary power to suppress the generic name *Haliplanella* Treadwell, 1943 and all uses of the name for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name Haliplanella Hand, 1956 (gender: feminine), type-species by monotypy Sagartia luciae Verrill, 1898 (Anthozoa);

- (3) to place on the Official List of Specific Names in Zoology the name *lineata* Verrill, 1869, as published in the binomen *Sagartia lineata* (senior subjective synonym of the type-species of *Haliplanella* Hand, 1956);
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the generic name *Haliplanella* Treadwell, 1943 (Polychaeta), as suppressed in (1) above.

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References

- Atoda, K. 1973. Pedal laceration of the sea anemone, Haliplanella luciae. Publications of the Seto Marine Biological Laboratory, 20 (Proceedings of the Second International Symposium on Cnidaria): 299–313.
- Atoda, K. 1976. Development of the sea anemone, Haliplanella luciae. 5. Longitudinal fission and the origin of mono-, di- and tri-glyphic individuals. Bulletin of the Marine Biological Station Asamushi, 15: 133-146.
- Dales, R.P. 1957. Pelagic polychaetes of the Pacific Ocean. Bulletin of the Scripps Institution of Oceanography, 7: 99–168.
- de Oliveira Pires, D. 1987. Tricnidactis errans, n. gen., n. sp., (Cnidaria, Actiniaria, Haliplanellidae) from Guanabara Bay, Rio de Janeiro, Brazil. Anais da Academia Brasileira de Ciências, 59(3): 275.
- Dunn, D.F. & Hand, C. 1977. Haliplanella Treadwell, 1943 (Polychaeta): request for suppression under the plenary powers in favour of Haliplanella Hand, 1955 (Anthozoa). Bulletin of Zoological Nomenclature, 34: 94–97.
- Dunn, D.F. & Hand, C. 1978. Reply to Dr. Williams (:17) and Drs. Den Hartog. Bulletin of Zoological Nomenclature, 35: 74-75.
- Edwards, M.A. & Hopwood, A.T. (Eds.). 1966. Nomenclator Zoologicus, vol. 6 (1946-1955). 329 pp. Zoological Society of London. London.
- Fautin, D.G. 2008. Hexacorallians of the World. http://geoportal.kgs.ku.edu/hexacoral/ anemone2/index.cfm (Accessed 21 September 2009).
- Fautin, D.G., Tan, S.H. & Tan, R. [in press]. Sea anemones (Cnidaria: Actiniaria) of Singapore: abundant and well-known shallow-water species. Raffles Bulletin of Zoology.
- Hand, C. 1956 [for 1955]. The sea anemones of central California part III. The acontiarian anemones. Wasmann Journal of Biology, 13: 189-251.
- Hartman, O. 1956. Polychaetous annelids erected by Treadwell, 1891 to 1948, together with a brief chronology. Bulletin of the American Museum of Natural History, 109: 239-310.
- Hartman, O. 1959. Catalogue of the polychaetous annelids of the world, Part I. Occasional Papers of the Allan Hancock Foundation, 23: 1-353.
- den Hartog, J.C. 1978. Comment on the proposed suppression of Haliplanella Treadwell (Polychaeta) in favour of Haliplanella Hand (Anthozoa). Z.N. (S.) 2192. Bulletin of Zoological Nomenclature, 35: 73-74.
- Kiener, A. 1971. Contribution a [sic] l'écologie, la physiologie et l'éthologie de l'actinie Diadumene luciae (Verrill). Bulletin de la Société Zoologique de France, 96: 581-603.
- Minasian, L.L., Jr. 1982. The relationship of size and biomass to fission rate in a clone of the sea-anemone Haliplanella luciae. Journal of Experimental Marine Biology and Ecology, 58: 151 - 162.
- Minasian, L.L., Jr. & Mariscal, R.N. 1979. Characteristics and regulation of fission activity in colonial cultures of the cosmopolitan sea-anemone, Haliplanella luciae. Biological Bulletin, 157: 478-493.

- Mire, P. & Venable, S. 1999. Programmed cell death during longitudinal fission in a sea anemone. Invertebrate Biology, 118: 319-331.
- Molina, L.M., Valinas, M.S., Pratolongo, P.D., Elias, R. & Perillo, G.M.E. 2009. First record of the sea anemone Diadumene lineata (Verrill 1871) associated to Spartina alterniflora roots and stems, in marshes at the Bahia Blanca estuary, Argentina. Biological Invasions, 11: 409-416.
- Neave, S.A. (Ed.). 1939. Nomenclator Zoologicus, vol. 2 (D-L). 1025 pp. Zoological Society of London, London.
- Neave, S.A. (Ed.). 1950. Nomenclator Zoologicus, vol. 5 (1936-1945). 308 pp. Zoological Society of London. London.
- Ocaña, O. & den Hartog, J.C. 2002. A catalogue of Actiniaria and Corallimorpharia from the Canary Islands and from Madeira. Arquipélago. Boletim da Universidade dos Açores. Ciências Biológicas e Marinhas [Life and Marine Sciences], 19A: 33-53.
- Reibisch, J. 1893. Die Phyllodociden der Plankton-Expedition. Zoologischer Anzeiger, 16: 248-255.

- Reibisch, J. 1895. Die pelagischen Phyllodociden und Typhloscoleciden der Plankton-Expedition. Ergebnisse der Plankton-Expedition der Humbolt-Stiftung, 2H.c., 63 pp.
- Sassaman, C. & Mangum, C.P. 1970. Patterns of temperature adaptation in North American Atlantic actinians. Marine Biology, 7: 123–130.
- Sassaman, C. & Mangum, C.P. 1973. Relationship between aerobic and anaerobic metabolism in estuarine anemones. Comparative Biochemistry and Physiology, 44: 1313-1319.
- Seaton, R.W. 1985. Sagartia luciae Verrill, 1898 (Coelenterata, Actiniaria); request for nomenclatural precedence. Bulletin of Zoological Nomenclature, 42: 306-30.
- Shick, J.M. 1976. Ecological physiology and genetics of the colonizing actinian Haliplanella luciae. Pp. 137-146 in Mackie, G.O. (Ed.), Coelenterate Ecology and Behavior, Plenum Publ. Corp., New York.
- Stephenson, T.A. 1920. On the classification of Actiniaria. Part I. Forms with acontia and forms with a mesogloeal sphincter. Quarterly Journal of Microscopical Science, ser. 2, 64: 425-574.
- Stoliczka, F. 1869. On the anatomy of Sagartia schilleriana and Membranipora bengalensis, a new coral and a bryozoan living in brackish water at Port Canning. Journal of the Asiatic Society of Bengal, 38: 28–63.
- Treadwell, A.L. 1943. Polychaetous annelids. Sci. Res. Cruise VII Carnegie 1928–29. Biology—IV. Carnegie Institution of Washington publication, 555: 29–59.
- Ushakov, P.V. 1972. Fauna of the U.S.S.R., Polychaetes, vol. I. Polychaetes of the suborder Phyllodociformia of the polar basin and the northwestern part of the Pacific. Akademia Nauk SSSR, Zoological Institute, n.s. no. 102. 259 pp. Translated by the Israel Program of Scientific Translation. 1974. Jerusalem.
- Verrill, A.E. 1869. Synopsis of the polyps and corals of the North Pacific Exploring Expedition, under Commodore C. Ringgold and Capt. John Rodgers, U.S.N., from 1853 to 1856. Collected by Dr. Wm. Stimpson, naturalist to the Expedition. Part IV. Actiniaria. [Second part]. Proceedings of the Essex Institute, 6: 51–104.
- Verrill, A.E. 1898. Descriptions of new American actinians, with critical notes on other species, I. American Journal of Science and Arts, (4)6: 493–498.
- Viguier, C. 1886. Etudes sur les animaux inférieurs de la Baie d'Alger II. Recherches sur les annelides pélagiques. Archives de Zoologie Expérimentale et Générale, (2)4: 347-442.
- Watson, G.M. & Mire, P. 2004. Dynamic tuning of hair bundle mechanoreceptors in a sea anemone during predation. Hydrobiologia, 530/531: 123-128.
- Watson, G.M., Pham, L., Graugnard, E.M. & Mire, P. 2008. Cadherin 23-like polypeptide in hair bundle mechanoreceptors of sea anemones. Journal of Comparative Physiology A, **194**: 811–820.
- Williams, R.B. 1968. Control of the discharge of cnidae in Diadumene luciae (Verrill). Nature (London), 219: 959.
- Williams, R.B. 1972. Chemical control of feeding behaviour in the sea anemone Diadumene luciae (Verrill). Comparative Biochemistry and Physiology, 41A: 361-371.

Williams, R.B. 1973. Are there physiological races of the sea anemone Diadumene luciae? Marine Biology, 21: 327–330.

Williams, R.B. 1975. Catch tentacles in sea anemones: occurrence in Haliplanella luciae (Verrill) and a review of current knowledge. Journal of Natural History, 9: 241-248.

Williams, R.B. 1978. A comment on the request for suppression of Haliplanella Treadwell (Polychaeta) in favour of Haliplanella Hand (Anthozoa). (Z.N. (S.) 2192). Bulletin of Zoological Nomenclature, 35: 17–18.

Zabin, C.J., Carlton, J.T. & Godwin, L.S. 2004. First report of the Asian sea anemone Diadumene lineata from the Hawaiian Islands. Occasional Papers of the Bernice Pauahi Bishop Museum, 79: 54–58.

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Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).